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AMENDMENTS TO CLAIMS

1. (Currently amended) A method of processing a digital image corresponding to a scanned document, the method comprising:

   analyzing the image to obtain statistical data; [[and]]

   deriving background noise removal data for the entire image based on the statistical data; and

   storing the entire image and the background noise removal data to allow the scanned document to be displayed with background noise removal and without background noise removal.

2. (Previously presented) The method as described in Claim 1 further comprising pre-processing the image while analyzing the image and using intermediate results obtained from pre-processing the image to obtain the statistical data.

3. (Previously presented) The method as described in Claim 1 wherein the background noise removal data includes a tonemap function or sampled values of the tonemap function .

4. (Currently amended) The method as described in Claim [[23]] 1 wherein the image and the background noise removal data are stored together.

5. (Previously presented) The method as described in Claim 1 wherein analyzing the image further comprises estimating a global background tone value.

6. (Previously presented) The method as described in Claim 5 wherein the background noise removal data is derived from the global background tone value.

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7.   (Cancelled)

8.   (Previously presented) The method as described in Claim 22 further comprising providing a user interface including an option allowing the selection of background noise removal on a page-by-page basis.

Claims 9-13 (Cancelled)

14. (Previously presented) The method as described in Claim 1 wherein the image is color-converted to a luminance-chrominance color space prior to obtaining the statistical data, and wherein the statistical data is obtained from the luminance channel.

15. (Previously presented) A system for processing a digital image corresponding to a scanned document, the system comprising:

statistical analyzer for analyzing the image to obtain statistical data;

function derivator for deriving background noise removal data for the image based on the statistical data; and

data storage for storing the image and the background noise removal data together to allow the scanned document to be displayed with background noise removal and without background noise removal.

16. (Previously presented) The method of claim 1 wherein the statistical data and the background noise removal data are obtained in real time, as the document is being scanned.

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17. (Previously presented) The system as described in Claim 15 wherein the statistical analyzer pre-processes the image while analyzing the image and uses intermediate results obtained from pre-processing the image to obtain the statistical data.

18. (Previously presented) The system as described in Claim 15 wherein the background removal data includes a tonemap function or sampled values of the tonemap function.

19. (Previously presented) The system as described in Claim 15 further comprising a user interface for allowing display of the scanned document with and without background noise removal.

20. (Previously presented) The system as described in Claim 19 wherein the user interface includes an option allowing the selection of background noise removal on a page-by-page basis.

21. (Cancelled)

22. (Currently amended) The method of claim [[23]] 1, further comprising providing user selection to interactively:
in a first case, use the stored image and the stored data to remove background noise from the stored image prior to rendering the stored image; and
in a second case, bypass background noise removal in the stored image prior to rendering the stored image.

23. (Cancelled)

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24. (New) Apparatus comprising a processor for processing a digital image, the processing including:

analyzing the digital image to obtain statistical data;

using the statistical data to derive tonemap data that maps a background of the image, including noise in the background, to a preferred tone; and

storing the entire image and the tonemap data to allow the digital image to be displayed with and without the background mapped to the preferred tone.

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